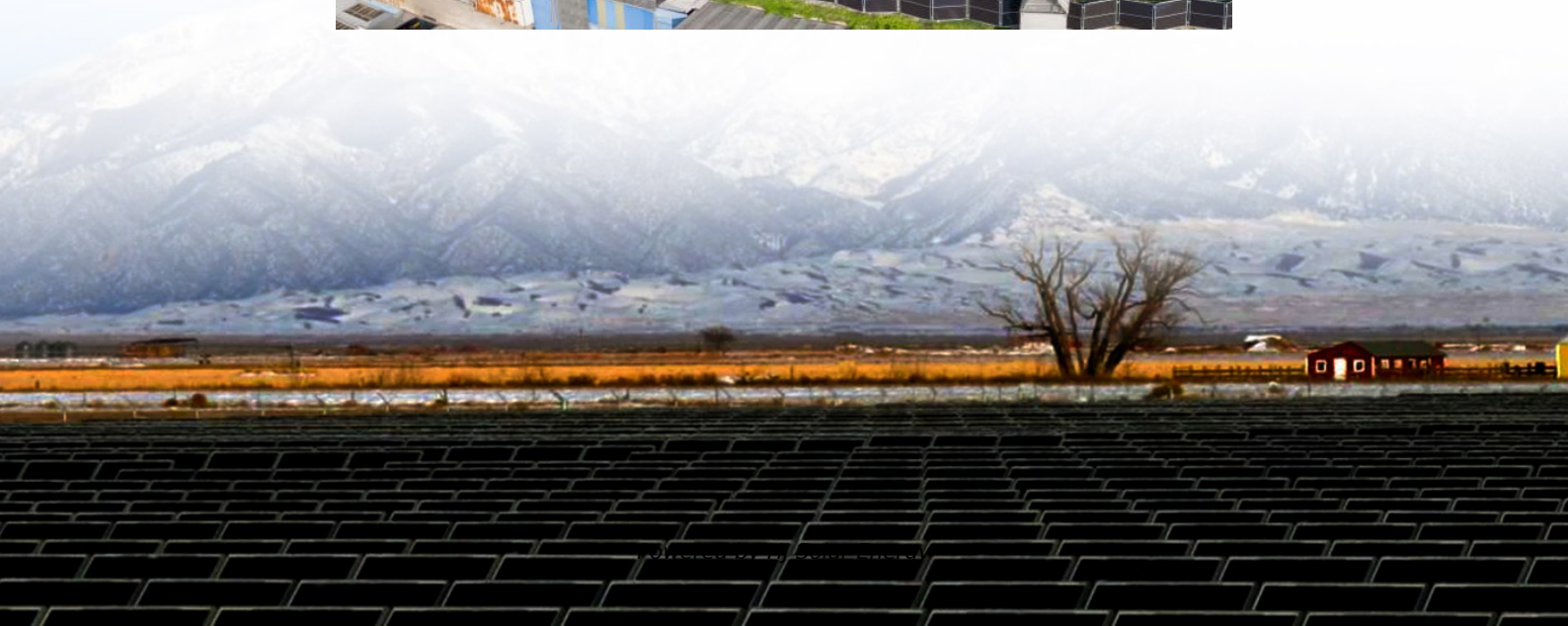


# Cents per kwh hour solar graph





## Overview

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IRENA presents solar photovoltaic module prices for a number of different technologies. Here we use the average yearly price for technologies 'Thin film a-Si/u-Si or Global Price Index (from Q4 2013)'.

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IRENA presents solar photovoltaic module prices for a number of different technologies. Here we use the average yearly price for technologies 'Thin film a-Si/u-Si or Global Price Index (from Q4 2013)'. This data is expressed in US dollars per watt, adjusted for inflation. IRENA (2025); Nemet.

Utility solar PV pricing refers to the cost of large-scale solar photovoltaic (PV) projects that supply electricity to the grid, typically operated by utilities or independent power producers (IPPs). These projects range from megawatt (MW) to gigawatt (GW) scale, making them the most cost-effective.

- Values are preliminary estimates based on a cutoff model sample. See Technical Notes for a discussion of the sample design for the Form EIA-826. Utilities and energy service providers may classify commercial and industrial customers based on either NAICS codes or demands or usage falling within.

As of 2025, the average cost of residential solar panels in the U.S. is between \$15,000 and \$25,000 before incentives. This typically translates to about \$2.50 to \$3.50 per watt of installed capacity (more on price per watt below). The total price depends on your system size, location, roof type.

Amongst the different sources of renewable electricity generation, concentrating solar power and offshore wind were the most expensive in 2023, with an average cost of \*\*\*\* and \*\*\* cents per kilowatt-hour, respectively.

The average cost per unit of energy generated across the lifetime of a new power plant. This data is expressed in US dollars per kilowatt-hour. It is



adjusted for inflation but does not account for differences in living costs between countries. How have things changed?

When will countries phase out. How much does solar energy cost?

Solar power costs between 3 and 6 cents per kWh, while fossil fuels cost between 5 and 17 cents per kWh. Solar Energy Statistics stated that over the past 10 years, the price of solar panels has dropped by more than 60%. The cost of solar battery storage has decreased by 72% since 2015.

How is solar price measured?

The solar price for utility-scale projects is measured using LCOE, which typically has the lowest LCOE among all solar PV sectors. As solar prices continue to decline, utility solar PV plays a key role in the global energy transition, supporting large-scale renewable energy adoption.

How do I calculate the cost of solar?

First, you can use an online solar cost calculator, like this one powered by solar.com. Simply punch in your address and your average monthly electricity bill, and the calculator will give you a side-by-side comparison of the cost of solar versus paying for utility electricity.

How much does electricity cost in 2023?

Amongst the different sources of renewable electricity generation, concentrating solar power and offshore wind were the most expensive in 2023, with an average cost of 11.7 and 7.5 cents per kilowatt-hour, respectively. In contrast, onshore wind electricity generation cost an average of 3.3 cents per kilowatt-hour that year.

How efficient is solar energy?

This growth is backed by strong data, proving that solar energy is a key part of the move toward clean and sustainable energy sources. As of 2023, most commercial panels have efficiencies between 17% and 20%, but researchers have developed PV cells that are nearly 50% efficient.

How much does wind electricity cost per kilowatt-hour?

In contrast, onshore wind electricity generation cost an average of 3.3 cents per kilowatt-hour that year. Get notified via email when this statistic is



updated. \* For commercial use only Access limited to Free Statistics. Premium Statistics are not included. The statistic on this page is a Premium Statistic and is included in this account.



## Cents per kwh hour solar graph

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### [Solar Photovoltaic System Cost Benchmarks](#)

The U.S. Department of Energy's solar office and its national laboratory partners analyze cost data for U.S. solar photovoltaic systems to develop cost benchmarks to measure progress ...

### [Solar Energy Statistics By Country, Costs And Economics](#)

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goals and guide research and development ...



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The chart below shows the steady rise of utility electricity prices from 5 cents per kWh to nearly 18 cents per kWh over the last 45 years. For non-solar owners, this trend is a ...

### Cost of electricity by source

As per the 2021 analysis of Solar Power Generation Costs in Japan, module unit prices fell sharply. In 2018, the average price was close to 60,000 yen/kW, but by 2021 it is estimated at ...



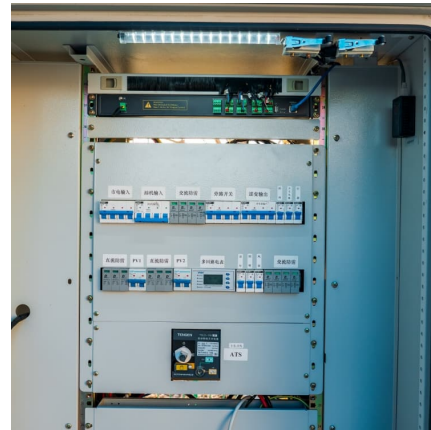
### [Latest Solar Price Chart and Dashboardo Carbon Credits](#)

Solar Pricing and Price Charts. Solar prices across the world's most active residential, utility, and commercial PV (Photovoltaics) markets.



### [Levelized cost of energy for renewables](#)

The average cost per unit of energy generated across the lifetime of a new power plant. This data is expressed in US dollars per kilowatt-hour. It is adjusted for inflation but does not account for differences in living costs between countries.



### [Renewable electricity cost worldwide by type 2023](#)

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### **Renewable electricity cost worldwide by type 2023, Statista**

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### **Cost of electricity by source**

As per the 2021 analysis of Solar Power Generation Costs in Japan, module unit prices fell sharply. In 2018, the average price was close to 60,000 yen/kW, but by 2021 it is estimated at 30,000 yen/kW, so cost is reduced by almost half.

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